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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/745,525	12/26/2000	Qingwen Hu	7000-432	2154
27820	7590	05/17/2006	EXAMINER	
WITHROW & TERRANOVA, P.L.L.C. P.O. BOX 1287 CARY, NC 27512			NGUYEN, QUYNH H	
			ART UNIT	PAPER NUMBER
			2614	
DATE MAILED: 05/17/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/745,525	<b>Applicant(s)</b> HU ET AL.	
	<b>Examiner</b> Quynh H. Nguyen	<b>Art Unit</b> 2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on remarks filed 3/17/06 and Interview 4/06.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-46 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. The previous Final Office action mailed 1/17/06 is withdrawn. This office action is made **Final**.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Response to Amendment***

3. Applicant's amendment filed 10/28//05 has been entered. Claims 1, 3-6, 27-28, 32-33, 35, 37, and 40-46 have been amended. No claims have been cancelled. No claims have been added. Claims 1-46 are still pending in this application, with claims 1, 32, 33, and 40 being independent.

### ***Claim Rejections - 35 USC § 103***

4. Claims 1-10, 14-29, 32-37, and 39-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ash et al. (U.S. Patent 4,669,113) in view of Qureshi et al. (U.S. Patent 6,738,351).

Regarding claims 1, 32, and 33, Ash et al. teach in integrated network controller for a dynamic nonhierarchical dynamic routing on the alternate paths available in the switching system, the data network including a plurality of switches (Fig. 2, SW 10) and a plurality of links connecting the switches (Fig. 2, 11), the method comprising: at a

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given one of the plurality of switches (Fig. 2, SW 10), each of the switches contains memory for storing information regarding the trunk links between itself and other switches (col. 2, lines 22-32), where the one of the plurality of links connects to the given one of the plurality of switches. Ash et al. further teach the routing sequences to minimize potential blocking in the network by evaluating the least loaded path for each potential connection of two switches in the system (Abstract and col. 4, lines 58-68), then preplanning changes in the first choice path and any required changes in the subsequent choice paths to the switching offices (col. 8, lines 59-68). In one embodiment, the concept of trunk reservation on a link deals with the traffic intensity between the offices directly connected to the link, for example reserves trunks in each link where the high blocking indicator level exceeds 1, to determine whether to pick the first choice path or other subsequent choice paths (col. 13, line 12 through col. 14, line 68) reads on claimed "if the utilization of the trunk exceeds a first threshold, initializing a first degree of adaptation".

However, Ash et al. do not teach the measurement of the utilization of a single trunk, and the degree of adaptation comprises preventing new connections having specific characteristics from being established on the trunk and where the specific characteristics relate to whether the new connections are voice or data connections.

Qureshi teaches when the quality of existing calls starts degrading due to congestion, preventing new calls from being established in the PSTN network by rerouting PSTN network calls (voice) to the packet-based network (data) (col. 2, lines

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28-41; col. 4, lines 6-13; col. 12, lines 18-26). Ash and Qureshi do not teach the measurement of the utilization of a single trunk.

It would have been obvious to one of ordinary skill in the art at the time the invention was made that it is necessary to monitor the utilization of each trunk in the group of trunks in order to obtain the measurement for the trunk group. Furthermore, Ash teaches (col. 13, line 50 through col. 14, line 10) that the trunk reservation on a link deals with the traffic intensity between the offices directly connected to the link and when the traffic between those offices is high, a selected number of trunks on the direct link are reserved for traffic originating and terminating in those offices. Therefore, in Ash adaptation network, it would be necessary to measure the utilization of trunks in order to reserve more trunks in the event of traffic intensity. Moreover, utilizing the teachings of Qureshi into the teachings of Ash for the purpose of avoiding traffic congestion. For example, voice connections are prevented and data connections are accepted since in voice connection, information content is spread over a wider bandwidth than in data connection the package can be broken into segments and reassembled at the destination; another method of preventing traffic congestion is rerouting PSTN network calls (voice) to packet-based-network (data).

Regarding claims 2, 10, 34, and 41, Ash et al. teach consulting the database (Fig. 2, *database blocks 130*) to determine a course of action in response to the initializing the first degree of adaptation (col. 7, lines 9-47).

Regarding claims 3 and 35, Qureshi teaches voice connections are prevented and data connection are accepted (col. 2, lines 28-41 - *voice connections are prevented*

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*from going through PSTN network, data connections are going through packet-based network).*

Regarding claims 4-6, Ash et al. teach trunks in service table, trunk status map database, routing database, and routing candidate list that contains lists of the path candidates for each originating switch (OS) - terminating switch (TS) pairs in the network, each OS-TS pair has a unique routing sequence and each routing sequence has a "first choice" path and "subsequent choice" paths (col. 7, line 1 through col. 8, line 48) reads on claimed "the specific characteristics relate to a priority of the new connections, relate to a destination or source of the new connections".

Regarding claims 7-8, and 36-37, Ash et al. teach when the number of unacknowledged attempts exceeds a predetermined threshold (col. 7, lines 15-16 - peg counts, overflow counts) for the particular trunk group, more measurements are taken in order to determine which equipment is defective or no longer active (col. 13, lines 12-34; col. 14, lines 17-38 - *where Ash discussed removing two-link paths with zero discounted idle circuits from the routing sequence*) and therefore preventing new connections established on that particular equipment, for example the particular trunk.

Regarding claim 9, Ash et al. teach if the utilization of the trunk exceeds a second threshold, for example the trunk is busy or idle, initializing a second degree of adaptation (col. 13, line 12 through col. 14, line 68 - *where Ash discussed the concept of trunk reservation on a link deals with the traffic intensity between the offices directly connected to the link, for example reserves trunks in each link where the high blocking*

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*indicator level exceeds 1, to determine whether to pick the first choice path or other subsequent choice paths).*

Regarding claims 14 and 24, Ash et al. teach the concept of trunk reservation on a link deals with the traffic intensity between the offices directly connected to the link, for example reserves trunks in each link where the high blocking indicator level exceeds 1, to determine whether to pick the first choice path or other subsequent choice paths. The number of reserved trunks is related to the size of the trunk (col. 13, line 12 through col. 14, line 68). However, Ash et al. does not explicitly teach initializing a third / fourth degree of adaptation. "Other subsequent choice paths" in Ash reads on a third / fourth degree of adaptation.

Claims 15 and 25 are rejected for the same reasons as discussed above with respect to claim 2.

Regarding claims 16, 26, and 39, Ash et al. teach selecting a candidate connection among the plurality of connections using said trunk, for rerouting, where said candidate connection is associated with a path between a source and a destination, where said trunk is a segment of said path and said trunk connects said given one of said plurality of switches to a second one of said plurality of switches (col. 7, lines 27-47 - *where Ash* discussed a routing database contains two lists of the path candidates for each OS-TS ("path and trunk connects of switches") pairs in the network ("candidate connection"), each path candidate may be designated as primary candidate, a secondary candidate, a final routing candidate, etc.).

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Ash et al. does not explicitly teach acting such that said candidate connection is switched to an alternate path between said source and destination, where said alternate path excludes said trunk.

Qureshi teaches when the quality of existing calls starts degrading due to congestion, switched to an alternate path between the source and destination / preventing new calls from being established in the PSTN network by rerouting PSTN network calls (voice) to the packet-based network (data) (col. 2, lines 28-41; col. 4, lines 6-13; col. 12, lines 18-26).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Qureshi into the teachings of Ash for the purpose of avoiding traffic congestion. For example, voice connections are prevented and data connections are accepted since in voice connection, information content is spread over a wider bandwidth than in data connection the package can be broken into segments and reassembled at the destination; another method of preventing traffic congestion is rerouting PSTN network calls (voice) to packet-based-network (data).

Regarding claims 17 and 27, Ash et al. teach selecting the candidate connection is based on specific characteristics of the plurality of connections using the trunk (col. 7, lines 35-47).

Regarding claims 18 and 28, Ash et al. teach sending a rerouting request to another switch that precedes the given one of said plurality of switches in said path (col. 15, line 54 through col. 16, line 4).



Regarding claim 19, Ash et al. teaches originating and terminating switches (col. 6, lines 38-45). Ash et al. does not specifically teach the third switch is the source of the candidate connection. Originating switch among plurality of switches reads on "the third switch is the source of the candidate connection".

Regarding claims 20-22 and 29, it would have been obvious that the candidate connection should be established on the alternate path before the candidate connection is removed from the path in order to assure that the candidate connection would make to the alternate path without being dangling on the original path trying to get over to the alternate path.

Regarding claim 23, Ash et al. teach repeating the selecting process ("do loops" - col. 14, lines 11-16) for additional candidate if the utilization of the trunk continues to exceed the threshold to minimize potential blocking and overflow in the network.

Claim 40 is rejected for the same reason as discussed above with respect to claim 1. Furthermore, Ash et al. teach computer-executable instructions (Fig. 7-9).

Claim 43 is rejected for the same reason as discussed above with respect to claim 3. Furthermore, Ash et al. teach computer-executable instructions (Fig. 7-9).

5. Claims 11-13, 30-31, 38, and 43-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ash et al. (U.S. Patent 4,669,113) in view of Qureshi et al. (U.S. Patent 6,738,351) and further in view of Ackerley et al. (U.S. Patent 6,377,677).

Claims 11-12, 38 are rejected for the same reasons as discussed above with respect to claims 2 and 3. However, Ash and Qureshi do not teach sending a

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congestion notification to a source of the misbehaved connection and alerting the policy database to reduce a priority associated with the misbehave connection.

Ackerley et al. teach a method of routing calls in the communications network. The signaling system in use between PBXs will send a congestion message from the terminating local exchange to the originating PBX in the event that a failure has occurred (col. 1, line 61 through col. 2, line 8).

It would have been obvious to one of ordinary skill in the art to incorporate the feature of sending a congestion notification to a source of the misbehaved connection, as taught by Ackerley, in Ash's and Qureshi's systems in order to inform the source and alert the database before generating new routing sequences.

Regarding claim 13, Ash does not teach altering the policy database to reduce a priority associated with the misbehaved connection.

Qureshi teaches altering the policy database to reduce a priority associated with the misbehaved connection (col. 2, lines 28-41; col. 4, lines 6-13 - *where Qureshi discussed altering the routing route in the database by rerouting PSTN network calls to the packet-based network, hence reduce priority of the PSTN network connection*).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Qureshi into the teachings of Ash for the purpose of relieving congestion over the network. Furthermore, altering the policy database to reduce a priority associated with the misbehaved connection is well known and the advantage of using it is also well known. For example, removal of a failure trunk from the database.

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Claims 30 and 31 are rejected for the same reasons as discussed above with respect to claim 13.

Claims 43-46 are rejected for the same reason as discussed above with respect to claims 7, 8, 11, and 16, respectively. Furthermore, Ash et al. teach computer-executable instructions (Fig. 7-9).

### ***Response to Arguments***

6. Applicant's arguments with respect to claims 1-46 have been considered but are moot in view of the new ground(s) of rejection. Applicant's arguments are addressed in the above claims rejections.

### ***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

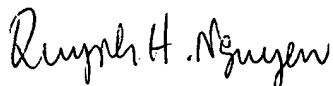
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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quynh H. Nguyen whose telephone number is 571-272-7489. The examiner can normally be reached on Monday - Thursday from 6:15 A.M. to 4:45 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing Chan, can be reached on 571-272-7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Quynh H. Nguyen

May 15, 2006